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ABSTRACT

To determine whether children with sensorimotor handicaps follow the developmental sequence of normal children in interactions with adults, toys, and peers, time sampling observations were made of self-, teacher-, toy-, and peer-directed behaviors of 36 handicapped preschool children. These children were assigned to three classrooms according to their developmental age (severely, moderately, and minimally delayed development), and matched by chronological age with a group of 12 normal 3 to 4 year old children. Results indicated that the handicapped children followed a sequence similar to that of the normal children. The incidence of other-directed behaviors such as looking, smiling, vocalizing and touching followed a developmental progression of direction towards self, teachers, then toys, and finally peers. With increasing developmental age progressively fewer self-directed and more peer-directed behaviors were observed. The groups were roughly equivalent in teacher-directed behaviors; the minimally delayed and normal children engaged in more toy-directed behaviors; and the normal children engaged in more peer-directed behaviors than any of the handicapped children. (Author/SS)

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Handicapped Preschool Children: Self, Teacher, Toy and Peer-Directed Behaviors

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ABSTRACT

Time sampling observations were made of self, teacher, toy and peer-directed behaviors of 36 handicapped preschool children who had been assigned to three classrooms according to their developmental age. These severely, moderately and minimally delayed groups of children were compared to a group of normal children matched to the handicapped children on chronological age. The incidence of other-directed behaviors such as looking, smiling, vocalizing and touching followed a developmental progression of being self-directed, directed at teachers, then toys and finally peers. With increasing developmental age progressively fewer self-directed and more peer-directed behaviors were observed. The groups were roughly equivalent on teacher-directed behaviors, the minimally delayed and normal children engaged in more toy-directed behaviors and finally the normal children engaged in more peer-directed behaviors than any of the handicapped children. Thus, the handicapped child's interactions with the world appeared to follow the same developmental sequence as that of the normal child.

Handicapped Preschool Children: Self, Teacher,

Toy and Peer-Directed Behaviors

The child's interactions with the world appear to proceed from parents to toys to peers. Very young infants relate primarily to parents, gradually become involved with toys and during later infancy and early preschool years begin to relate to peers (Eckerman, 1975; Eckerman & Whatley, 1977; Field, 1979, Lewis, Young, Brooks & Michalson, 1975; Maudry & Nekula, 1934; Piaget, 1972; 1975; Ramey, Finkelstein & O'Brien, 1976; Rubinstein & Howes, 1976). Although a similar progression has not been noted for children with sensorimotor handicaps, there is some evidence that handicapped children follow a normal developmental sequence in sensorimotor activities. Woodward (1959), for example, did a structural analysis of observations based on Piaget's levels of sensorimotor development, and found that handicapped children approximated the sensorimotor developmental sequence described by Piaget.

The purpose of the present study was to determine whether children with sensorimotor handicaps also follow the developmental sequence of interactions with adults, toys and peers. A cross-sectional approach was taken comparing handicapped children and normal children of equivalent chronological but varying developmental ages to explore this developmental progression in handicapped children. The children were assigned to classrooms according to developmental ages, determined by sensorimotor assessments, varying from classrooms of severely sensorimotor delayed to normal children. We hypothesized that despite developmental delays, the handicapped child's interactions with the world would also proceed from adults to toys to peers.

METHOD

Subjects

The children were 48 3-4 years olds (M = 40 months, S.D. = 4 months), 36 of whom were handicapped and 12 who were normal. The handicapped children had

varying sensorimotor handicaps including cerebral palsy, Down's Syndrome, mental retardation and speech and hearing deficits. Their developmental ages as determined by Bayley developmental assessments ranged from 10-31 months (M = 21 months, S.D. = 7 months). The normal children were of the same chronological age with no developmental delays. Thus, their developmental age (3-4 years) was more advanced than that of the handicapped children.

The 3-4 year old handicapped children had been assigned according to their developmental age or degree of developmental delay to one of three classrooms of 12 children each. Thus the three handicapped classrooms were homogenous groupings of severely delayed (SEV)(Mean developmental age = 13 months) moderately delayed (MOD) (Mean developmental age = 20 months), or minimally delayed children (MIN) (Mean developmental age = 29 months). Although the children of the severely delayed classroom had more severe degrees of cerebral palsy, mental retardation and/or speech and hearing deficits, the distribution of type of sensorimotor handicap was similar for each classroom, enabling classroom comparisons by degree of developmental delay. Similarly, the distribution of socioeconomic background (low and middle class) was the same for all classrooms (handicapped and non-handicapped).

Setting

The classes were held in carpeted rooms measuring approximately 20 x 40 feet and featuring different play areas sectioned off by standing toy shelves containing a variety of manipulative toys. The classrooms also featured floor play equipment including slides, tumbling mats, balls and forms, and crawl tunnels.

The classes met five days per week for five hours per day with the day's activity divided into free play, gross and fine motor activities, language development, lunch and naptime. Each of the classes was supervised by a teacher and teacher's aide.

Procedure

The children were observed by psychology graduate students assigned to separate classes. The students were unaware of the purpose of the study or the developmental and chronological ages of the children at the time of the observations.

Each child was observed according to a randomly ordered roster of the class each week for five minutes per observation. Since the observations were continued over one semester (a four month period of sixteen observations), the total observation time for each child was approximately 80 minutes.

Observations were made only during free play periods in order to minimize the amount of adult directed activity observed. Each observer used a time sample unit (TSU) sheet of operationally defined behaviors, observing for a ten-second unit followed by recording for a five-second unit for a total of 30 TSUs or five minutes per observation.

Piloting revealed that most of the handicapped children were exhibiting fairly simple social behaviors. Although the simple behaviors approximated those of infants and thus would not characterize the sophistication and richness of normal preschool interactions, we focussed on them to portray the behavioral repertoire of the handicapped child. Thus, the following distal and proximal behaviors were selected for coding: looking, smiling, vocalizing, moving toward, physical proximity, touching, offering toy, sharing toy, hitting and crying. The operational definitions of these behaviors were the same as those used by Eckerman & Whatley (1976). All of the behaviors were recorded for each target child as they were directed toward a teacher, a toy or peer. In addition, piloting revealed a number of non-directed or self-directed behaviors. We therefore observed looking at self (body parts or looking at face in mirror), non-directed smiling, non-directed vocalizations, non-directed movement

(e.g. body rocking, twirling) and touching self (e.g. hand flapping, mouth rubbing, ear tapping). Interobserver reliabilities were assessed using videotaped observations of four sessions per classroom. They were calculated by K (Kappa), a chance-corrected percent agreement measure with a statistical base (Bartko & Carpenter, 1976), and ranged from .78 to .93.

Analyses of Data

The raw data, number of TSUs per observation that the behaviors were observed, were converted to proportions or percentage of observation time the behaviors were observed. This conversion was necessary because some free play observation periods were interrupted by teacher activities short of the five-minute observations.

Multivariate analyses of variance were first performed on the groups of behaviors which were 1. non-directive or directed at self; 2. directed at teachers; 3. directed at toys; and 3. directed at peers. Following these analyses Sex (2) x Group (4) univariate analyses of variance were performed on each of the behaviors.

Post hoc comparisons of individual groups were made by Bonferroni t tests (Myers, 1972). In view of the number of comparisons made and in order to maintain an experimentwise error rate of $p < .05$, the experimental error rate per comparison (EC = EW/K) was set at $p < .001$.

RESULTS

Self-Directed Behaviors

As can be seen in Table I, the analyses yielded a significant effect for group on a number of variables including non-directed looking, smiling, vocalizing, movement and touching self. More of these behaviors occurred in the severely and moderately delayed groups, although differences for only non-directed vocalizing and touching of self met our conservative criterion of $p < .001$.

Post hoc comparisons suggested that the severely delayed (SEV) and moderately delayed (MOD) groups showed more non-directed vocalizations and more touching of self (hand flapping, mouth rubbing and ear tapping) than the minimally delayed (MIN) and normal (NORM) groups.

Table 1 about here

Teacher-directed behaviors

The analyses for this group of behaviors revealed some group effects which failed to meet our conservative p level. (See Table II). The trends on these related to the normal children vocalizing to, offering and sharing a toy with the teachers more frequently than did the handicapped children.

Table 2 about here

Toy-directed behaviors

The analyses for this group of behaviors revealed significant group effects for looking at and manipulating toys with the minimally delayed and normal groups exhibiting more of these behaviors (see Table III). There were very low means for smiling at, vocalizing to and hitting toys across all groups.

Table 3 about here

Peer-directed behaviors

Again the analyses suggested significant main effects for group, and post hoc comparisons revealed the following (see Table IV): 1. there was more frequent looking at peers by the normal children than by the minimally and moderately delayed children who in turn showed more peer-directed looking than the severely delayed children (NORM > MIN > MOD > SEV); 2. the normal children vocalized to peers more than did any of the handicapped children. 3. the normal children were in close physical proximity to their peers more often than the minimally delayed children who in turn differed significantly from the more delayed groups on these measures (NORM > MIN > MOD = SEV); 4. The normal children shared toys significantly more often than did any of the delayed children.

Table 4 about here

DISCUSSION

Comparisons between the same chronological but different developmental age handicapped and non-handicapped preschool children yielded a number of differences which suggest a developmental sequence. Across groups of increasing developmental age, children demonstrated progressively fewer self-directed or self-stimulating behaviors and progressively more peer-directed behaviors. In terms of teacher-directed behaviors, the groups were roughly equivalent and on toy-directed behaviors the least delayed and the normal children surpassed the more delayed groups. Since the more delayed groups were developmentally 13-20 months of age, we would expect them to have developed adult-directed behaviors. Although they showed fewer toy-related behaviors than adult-related behaviors and fewer toy-related behaviors than were shown by the less delayed and normal children, they did evidence some activity oriented toward toys. The less delayed children were roughly equivalent to the normal children on toy-related behaviors but were exceeded by the normal children on peer-oriented behaviors. The developmentally 29-month-old minimally delayed children had moved beyond the stages of self-directed and teacher-directed behaviors to toy-directed behaviors, but had not yet matched their normal peers on peer-related behaviors.

Thus, these data from a cross-sectional sample support the hypothesized developmental sequence of interactions, with interaction behaviors toward peers following those toward toys in turn following those toward teachers. Although the phenomena underlying this proposed developmental sequence are unclear, in the Piagetian sense the adult requires less accommodation by the child than does a toy which in turn requires less accommodation than a peer. Thus the sequence may be explained by the child developing increasing accommodation skills. In the Watsonian sense the adult provides more contingent responsivity than a toy

which in turn provides more contingency than a peer. In the Ainsworthian sense the adult is a less strange or more familiar object than a toy and the toy more familiar than a peer. For whatever reasons, the saliency of these interaction objects appears to follow a progression of adult to toys to peers.

Although self-directed behaviors were not included in the posited developmental sequence, they appeared to comprise a significant portion of the repertoire of the moderately and severely delayed children. These early nondirective behaviors have rarely been studied in the context of normal interactions. However, body rocking, lip sucking, finger mouthing and other stereotypic behaviors have been noted as naturally occurring streotypies during the early infancy of normal children (Field, Ting & Shuman, 1979; Kravitz & Boehm, 1971).

It would appear, however, that these mannerisms persisted beyond the appropriate developmental age in the handicapped children, at least in the moderately handicapped group of children where mean developmental age was 20 months. The persistence of stereotypies beyond an appropriate developmental stage for handicapped children may relate to their less developed communication and social skills and the attendant frustration of delays in these areas. In any case, these behaviors appeared to interfere with interactions with others and if prolonged may deter the development of other-directed interactions.

In summary, then, although generalizing about behaviors of handicapped children may be questionable inasmuch as each child presents a somewhat unique profile, these data suggest a developmental progression from self and adult to toy to peer-related behaviors. This sequence of interactions and the sensorimotor developmental sequence (Woodward, 1959) appear to be similar for normal and handicapped children. However, there do not appear to be any

developmental age specific behaviors. The other-directed social behaviors in these delayed children appear to first occur at stages beyond the developmental age at which they normally occur suggesting that the development of interaction behaviors may lag behind development of sensorimotor skills. This may be an artefact of deriving developmental age assignments from assessments which are predominantly sensorimotor, or may represent an actual developmental lag in the area of interaction behavior.

Although some have suggested that interaction skills may require as much attention as motor and cognitive skills, the latter have been the primary focus of this and other remediation intervention programs. Developmental advances made in cognitive and motor skills would certainly facilitate the handicapped child's interactions with others. Limited mobility and manipulative abilities, for example, probably contributed significantly to the less frequent interactions with toys and peers noted for the more handicapped children of this study. However, facial and vocal communication behaviors, too, are an important ingredient of a child's transactions with the world. As Hewett (1970) and others have suggested "these children may also need to be taught how to relate to others."

REFERENCES

Bartko, J. J. & Carpenter, W. T. On the methods and theory of reliability. The Journal of Nervous and Mental Disease, 1976, 163, 307-317.

Eckerman, C. O., Whatley, J. L. & Kutz, S. L. Growth of social play with peers during the second year of life. Developmental Psychology, 1975, 11, 42-49.

Eckerman, C. O. & Whatley, J. L. Toys and social interaction between infant peers. Child Development, 1977, 48, 1645-1656.

Field, T. Infant behaviors directed toward peers and adults in the presence and absence of mother. Infant Behavior and Development, 1979, 2, 47-54.

Field, T., Ting, G. & Shuman, H. H. The onset of rhythmic activities in normal and high-risk infants. Developmental Psychobiology, 1979, 12, 97-100.

Kravitz, H. & Boehm, J. Rhythmic habit patterns in infancy: Their sequences, age onset and frequency. Child Development, 1971, 42, 399-413.

Lewis, M., Young, G., Brooks, J. & Michalson, L. The beginning of friendship. In M. Lewis & L. A. Rosenblum (Eds.) Friendship and peer relations. New York: John Wiley & Sons, 1975.

Maudry, M. & Nekula, M. Social relations between children of the same age during the first two years of life. Journal of Genetic Psychology, 1939, 54, 193-215.

Myers, J. L. Fundamentals of experimental design. Boston: Allyn & Bacon, 1972.

Piaget, J. Play, dreams and imitations. New York: Norton Company, 1972.

Piaget, J. Origins of intelligence. New York: Norton Company, 1975.

Ramey, C. J., Finkelstein, N. W. & O'Brien, C. Toys and infant behavior in the first year of life. Journal of Genetic Psychology, 1976, 129, 341-342.

Rubinstein, J. & Howes, C. The effects of peers on toddlers' interactions with mother and toys. Child Development, 1976, 47, 597-605.

Woodward, M. The behavior of idiots interpreted by Piaget's theory of senso-i-motor development. British Journal of Educational Psychology, 29, 1960.

TABLE 1

Mean Proportion of time behaviors directed toward self,

F values and p levels (df = 3,43)

BEHAVIOR	SEV	MOD	MIN	NORM	F	p
Non-directed-looking	13	13	5	4	3.21	<.05
-smiling	12	9	3	.8	3.90	<.02
-vocalizing	18	10	5	4	8.23	<.001
-movement	22	13	.8	.5	4.15	<.01
Tactile self-stimulation	12	8	3	.6	19.70	<.001

* SEV = severely delayed
MOD = moderately delayed
MIN = minimally delayed
NORM = normal

TABLE 2

Mean proportion of time behaviors directed toward teachers, F values and p levels (df = 3,43)

BEHAVIOR	SEV	MOD	MIN	NORM	F	p
Looking	32	35	38	35	...	n.s.
Smiling	2	5	8	10	...	n.s.
Vocalizing	3	7	9	14	4.08	<.01
Proximity	27	18	29	34	2.66	<.10
Touching	4	5	2	7	2.41	<.10
Offering Toy	.1	.3	.7	10	5.22	<.01
Sharing Toy	.6	.5	.8	11	4.64	<.01
Taking Toy	.2	0	.4	0	...	n.s.
Hitting	0	.2	0	0	...	n.s.
Crying	9	7	2	.3	...	n.s.

TABLE 3

Mean proportion of time behaviors directed toward toy, F values and p levels (df = 3,43)

BEHAVIOR	SEV	MOD	MIN	NORM	F	p
Looking	21	29	41	44	13.14	<.001
Smiling	.8	.8	.2	0	...	n.s.
Vocalizing	1	.6	0	.4	...	n.s.
Manipulating	17	21	36	41	9.11	<.001
Hitting	4	6	.3	.4	...	n.s.

TABLE 4

Mean proportion of time behaviors directed toward peer, F values and p levels (df = 3,43)

BEHAVIOR	SEV	MOD	MIN	NORM	F	p
Looking	14	21	39	52	27.46	.001
Smiling	1	2	2	13	3.93	.01
Vocalizing	2	2	6	37	14.98	.001
Proximity	29	36	59	93	12.09	.001
Touching	2	.2	5	8	...	n.s.
Offering Toy	.3	.3	.5	8	4.79	.005
Sharing Toy	.2	.6	4	21	20.35	.001
Taking Toy	.6	1	3	1	...	n.s.
Hitting	1	3	1	1	...	n.s.
Crying	0	0	0	0	...	n.s.